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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/809,469	03/26/2004	Masaki Kobayashi	016912-0208	7635
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22428	7590	09/30/2005
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WASHINGTON, DC 20007

EXAMINER

MAI, NGOCLAN THI

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/809,469

Applicant(s)

KOBAYASHI, MASAKI

Examiner

Ngoclan T. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 10 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/15/04 & 3/26/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election of group I, claims 1-9 in the reply filed on 6/27/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claim 10 is withdrawn from consideration as drawn to non-elected invention.

2. Claims 1-9 are allowable.

3. The following is a statement of reasons for the indication of allowable subject matter:

RU 2164260 discloses a composition material having a gradient structure that have high hardness, strength and wear resistance. The amount of hardening of the working surface decreases smoothly, reaching the level of the basis volume of the material. The material can be formed by pressing and sintering a charge comprising compounds chosen from the group consisting of carbides, oxycarbides, carbonitrides, nitrides with the addition of steel or alloys containing elements capable of evaporating in the sintering process and the sintering is performed in a vacuum at 1200-1500 C with aging for 10-300 minutes. There is no teaching of the amount of the element present in the alloy or the ratio of the average concentration of the element in a region which is at least 1 mm inside from the surface of the sintered alloy to the average concentration of the element in a region between the surface and the position which is 0.1 mm inside the surface of the sintered alloy.

U.S. Patent No. 6,589,602 discloses a high adhesive surface-coated cemented carbide formed by diffusion and dispersion of specific compositional element in both of the hard film (surface coating) and the cemented carbide enhance the adhesiveness due to the effect of accelerating diffusion of the specific element or an effect of enhancing the interface strength. The specific compositionally element can be at least one selected from iron group metals, chromium, molybdenum, manganese, copper and silicon. The patent further teaches the content of the diffusive element is at the maximum at the interface between the hard film and the cemented carbide and gradually decreases from the interface toward inside of the hard film and the cemented carbide.

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JP4128330 discloses a sintered alloy having graded composition structure comprising bond phase of iron group metal and the hard phase consisting of the metallic carbide, wherein at least one kind of diffusing element among Cr, Mo, V, Ta, Al, Ti, Zr, Nb, Hf, W, Si, B, P and C in the surface layer gradually decrease to the inside from the surface of a part or a whole of the surface of such alloy down to 0.2 to 10 mm.

There is no teaching or suggestion in the art of the sintered alloy having a combination of diffusion element in the sintered alloy from 0.1 to 10% by weight and the content of the diffusion element gradually increases from the surface of the sintered alloy toward the inner portion thereof and the ratio of the average concentration of the specific metal element in the region which is at least 1 mm inside from the surface of the sintered body, to the average concentration of the specific metal element in a region between the surface and the position which is 0.1 mm inside the surface of the sintered body is 1.3 or more.

4. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope

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with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai*, *In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Conclusion

5. This application is in condition for allowance except for the following formal matters:

Claim 10 drawn to non-elected invention. Applicant is request to either cancel the claim or make appropriate action for rejoinder.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.


A shortened statutory period for reply to this action is set to expire **ONE MONTH** from the mailing date of this letter.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ngoclan T. Mai
Primary Examiner
Art Unit 1742

n.m.